



Air Quality Permitting Statement of Basis

July 19, 2006

Tier I Operating Permit No. T1-030315

**Pegram Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

Facility ID No. 007-00004

Prepared by:

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Air Quality Division**

FINAL

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Acronyms, Units, and Chemical Nomenclatures

40 CFR 60.330	NSPS Subpart GG: Standards of Performance for Stationary Gas Turbines
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal unit
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
HAPs	hazardous air pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NSPS	New Source Performance Standards; 40 CFR 60
PM	Particulate matter
PM₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
SIC	Standard Industrial Classification
SO₂	sulfur dioxide
Subpart GG	Subpart GG to NSPS: Standards of Performance for Stationary Gas Turbines; 40 CFR 60.330 thru .335
T/yr	tons per year
VOC	volatile organic compound

1. PURPOSE

The purpose of this memorandum is to explain the legal and factual basis for this draft Tier I operating permit, as required by IDAPA 58.01.01.362 – Technical Memorandums for Tier I Operating Permits.

2. FACILITY DESCRIPTION

The Pegram Compressor Station operates remotely from NWP's headquarters, located in Salt Lake City, and is used to transmit natural gas along NWP's natural gas transmission pipeline. The station is operated to meet the demand of the pipeline system rather than a fixed schedule. The arrangement of pipes and valves in the Pegram pipe yard allows natural gas to be transmitted in either direction of the pipeline.

Natural gas entering the station passes through two in-line filters (one for each turbine) that remove any impurities from the gas stream. The natural gas is compressed through the compressor and is returned to the transmission pipeline. Fuel for the turbine and other natural gas combustion equipment enters the station in a separate pipeline that originates in the pipe yard. Fuel gas is lowered from the pipeline pressures to pressures appropriate for the turbines in the fuel gas building.

From the fuel gas building, natural gas is transported to the turbines, the fuel gas heater, the space heaters, and the oil compressor. The turbines, fuel gas heater, and backup air compressor have their own exhaust stacks.

The emissions from the Pegram Compressor Station are largely the result of natural gas combustion. In addition, there are small amounts of emissions from various other sources.

3. FACILITY / AREA CLASSIFICATION

This facility has criteria emissions over 100 T/yr, and thus is a major facility as defined by IDAPA 58.01.01.008.10. The facility emits less than one ton per year of HAPs, therefore it is not major for HAPs because it emits less than 10 tons per year of any single HAP, and less than 25 tons per year of combined HAPs. The facility is not a major facility as defined by IDAPA 58.01.01.205 and it is not a designated facility as defined by IDAPA 58.01.01.006.26. The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at the facility.

The facility is located just outside of Pegram, Idaho, which is classified as unclassifiable for all federal and state criteria pollutants (SO₂, NO_x, CO, PM₁₀, ozone, and lead). Northwest Pipeline's Pegram Facility is located in AQCR 61 and UTM Zone 12.

The SIC defining the facility is 4922, *Natural Gas Transmission*.

This facility is subject to the New Source Performance Standard (NSPS) of 40 CFR 60.330 thru 60.335 – Subpart GG, Standards of Performance for Stationary Gas Turbines.

The facility is not subject to any of the following federal requirements:

- 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- 40 CFR 63 Maximum Available Control Technology (MACT)
- 40 CFR 64 Compliance Assurance Monitoring (CAM).

4. APPLICATION SCOPE

This permitting action is a renewal of the facility's existing Tier I operating permit. Permit condition updates are listed in Section 6 – *Permit Conditions* – of this memorandum.

4.1 Application Chronology

June 25, 2003	DEQ receives the permit renewal application
August 6, 2003	DEQ determines application complete
September 14, 2005	DEQ provides draft permit for facility and regional office review
May 5, 2006	DEQ issues draft permit for public comment
May 25 through June 23, 2006	DEQ provides draft permit for public comment
June 24, 2006	DEQ provides proposed permit for EPA review

5. PERMIT ANALYSIS

5.1 Emissions Inventory

An update emissions inventory is provided as Appendix B of this document. The portable turbine permitted under PTC No. 007-00004, issued August 23, 2001, has been permanently removed from the facility, including all required connections. This has resulted in an emissions decrease at the facility. DEQ terminated the portable turbine PTC December 21, 2005.

5.2 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this permit.

40 CFR 60, Subpart GG Standards of Performance Stationary Gas Turbines

This New Source Performance Standard (NSPS) establishes the requirements for all stationary gas turbines with heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on a the lower heating value of the fuel fired, and have commenced construction, modification, or reconstruction after October 3, 1977. Both turbines at Pegram Station are subject to the standard, and have already undergone the initial performance test required by the regulation to show compliance with the NO_x ppm standard.

Revisions to NSPS Subpart GG are incorporated into this permit. The custom fuel monitoring provision used to show compliance with the fuel sulfur content standard of Subpart GG has been replaced.

Subpart GG revisions state that the operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in §60.331(u). Northwest Pipeline has opted to demonstrate compliance with the sulfur content provisions according to 40 CFR 60.334(h)(3)(i): "The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less, shall be used to demonstrate compliance with the definition of natural gas."

FERC Gas Tariff

Northwest Pipeline has submitted the Federal Energy Regulatory Commission (FERC) Gas Tariff to satisfy §60.334(h)(3)(i). The Tariff clearly specifies:

- in Sections 3.1(a) and 3.1(a)(2) that the gas shall contain not more than one quarter grain of hydrogen sulfide per 100 cubic feet and not more than 20 grains total sulfur per 100 cubic feet for all gas delivered by Shipper to Transporter at Receipt Points not connected to the La Plata Facilities; and,
- in Section 3(b) that all gas delivered by Shipper to Transporter at Receipt Points connected to the La Plata Facilities shall contain not more than 0.3 grains of mercaptan sulfur per 100 cubic feet of gas. The gas shall contain not more than 0.75 grains of total sulfur per 100 cubic feet of gas.

The two subdivisions of La Plata and non La Plata gas constitute 100% of Northwest Pipeline's natural gas.

The turbines at the facility have satisfied the initial test requirements of Subpart GG and the facilities PTCs; therefore, SO₂ testing requirements are satisfied. This Tier 1 permit renewal addresses revisions to NSPS Subpart GG in Permit Conditions 3.8 and 4.8: replacement turbines shall comply with the NO_x requirements of the subpart; SO₂ testing is no longer required, but replaced with the tariff evidence of natural gas sulfur content.

40 CFR 63 Subpart HHH National Emission Standards for Hazardous Air Pollutants
from Natural Gas Transmission and Storage Facilities

Subpart HHH (§ 63.1270 et. seq.) sets standards for glycol dehydrators at sources which are a major source of HAPs. Pegram Station is not a major source of HAPs and does not contain a glycol dehydrator; therefore, the standard does not apply.

40 CFR 63 Subpart YYYY..... National Emission Standards for Hazardous Air Pollutants for
Stationary Combustion Turbines

Subpart YYYY establishes national emission limitations and operating limitations for hazardous air pollutants (HAPs) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations. Pegram Station is not a major source of HAPs; therefore, the standard does not apply.

6. PERMIT CONDITIONS

6.1 Permit Condition Changes

The following Permit Conditions have been changed with this Tier 1 permit renewal. No applicable PTC conditions have been changed with this Tier 1 permit renewal.

Permit Section 1: TIER I OPERATING PERMIT SCOPE

Regulated Sources

Permit Section 1 was added as a Tier 1 permit format update. Table 1.1 *REGULATED SOURCES* reflects removal of the Solar T-4700S portable turbine.

Permit Section 2: FACILITY-WIDE CONDITIONS

Test Methods

Permit Condition 2.11 changed the NO_x test methods to reflect the initial performance requirement of NSPS Subpart GG and the periodic compliance use of Reference Method 7E for NO_x compliance determination.

Permit Sections 3 and 4: SOLAR T-4700 and T-4500 TURBINES

Monitoring and Recordkeeping Requirements

Permit Conditions 3.7 and 4.7 change the basis for NO_x emission estimates and emission limit compliance. The previous Tier 1 permit required hourly fuel use monitoring and emissions calculations based on the highest hourly fuel use applied to turbine emission factors. The new requirements apply the most recent emission test results (in lb/hr or lb/MMBtu) to actual hours of operation or actual fuel use to show compliance with the NO_x emission limits.

Permit Conditions 3.9 and 4.9 change the periodic compliance testing for NO_x from results-determined frequency to biennial frequency. The Permit Conditions also serve to differentiate between periodic compliance test methods (Reference Method 7E) and initial performance test methods (NSPS Subpart GG).

Permit Conditions 3.10 and 4.10 reflect the change in NSPS Subpart GG requirements for demonstrating fuel sulfur content compliance. Periodic fuel sampling is no longer required; a current tariff sheet now serves as demonstration of compliance (40 CFR 60.334(h)(3)(i)).

7. PERMIT REVIEW

7.1 *Regional Review of Draft Permit*

DEQ's Pocatello Regional Office was provided a draft for review on September 14, 2005. Comments were provided and incorporated as requested.

7.2 *Facility Review of Draft Permit*

The facility was provided a draft for review on September 14, 2005. Facility comments were received and most were incorporated as requested. However, a request to change the NO_x emissions for Unit 2 could not be granted because the emissions limit is established in a PTC. The annual NO_x limit of 68.8 ton per year is based on an average as submitted in the PTC application in 1994.

7.3 *Public Comment*

Public notice and public comment period, including an opportunity for a hearing, affected states review; and EPA review was provided from May 25 through June 23, 2006, as required by IDAPA 58.01.01.364 and 366, respectively. No comments were submitted.

8. FUEL TYPE

The requirement for pipeline quality natural gas to be burned in the turbines satisfies the sulfur standards for NSPS Subpart GG.

9. INSIGNIFICANT ACTIVITIES

Table 5.1 lists the insignificant sources at the Pegram Compressor Station. These emission units qualify as insignificant due to the quantity of emissions or to the source being specifically listed in IDAPA 58.01.01.317.01(a/b). While there are no monitoring requirements for insignificant emissions units at this facility, these units must comply with all applicable federal, state, and local requirements.

Table 5.1 INSIGNIFICANT ACTIVITIES AND EMISSION UNITS

Description	Insignificant Activities Section Citation IDAPA 58.01.01.317.01
Fuel Gas Heater 250,000 Btu/hr	b.i.(5)
Back-up Air Compressor Wisconsin 15 hp Natural gas fired	a.i.(78)
Space Heaters	b.i.(5)
Lubricating Oil Tanks Two make-up oil tanks at 500 gallons each; One 90 barrel used oil tank.	a.i.(4)
Natural Gas Pipeline and Fuel System	b.i.(30)
Combustion toilet 25,000 Btu/hr	b.i.(5)

Emissions from the lubricating oil system are small amounts of VOC. Emissions from the natural gas pipeline and fuel system are VOC and some HAPs and TAPs. These emissions result from leaking valves, flanges, pressure relief valves, and an annual testing of the emergency shutdown system that includes a facility-wide blowdown. Emissions generated from all other insignificant emissions sources are products of natural gas combustion, which include PM₁₀, SO₂, CO, NO_x, VOCs, and some HAPs and TAPs.

10. REGISTRATION FEES

This facility is a major facility as defined by IDAPA 58.01.01.008.10; therefore, registration and registration fees in accordance with IDAPA 58.01.01.387 apply.

11. RECOMMENDATION

Based on the Tier I application and review of state rules and federal regulation, staff recommends that DEQ issue final Tier I Operating Permit No. T1-030315 to NWP for its Pegram compressor station.

CM/bf Permit No. P-030315

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APPENDIX A

**Pegram Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

T1-030315

AIRS Table

AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

Facility Name: Northwest Pipeline Corporation, Pegram Compressor Station
Facility Location: Bear Lake County, near Pegram; S14, T15S, R45E
AIRS Number: 007-00004

AIR PROGRAM	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION	
POLLUTANT							A – Attainment U – Unclassifiable N – Nonattainment	
SO ₂	B						U	
NO _x	A					A	U	
CO	B						U	
PM ₁₀	B						U	
PT (Particulate)	B						U	
VOC	B						U	
THAP (Total HAPs)	B							U
			APPLICABLE SUBPART					
			GG					

- A** = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
B = Actual and potential emissions below all applicable major source thresholds.
C = Class is unknown.
ND = Major source thresholds are not defined (e.g., radionuclides).

APPENDIX B

**Pegram Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

P-030315

**Potential to Emit
Expected Emissions**

PEGRAM STATION POTENTIAL TO EMIT

Facility Total Potential to Emit

Pollutant	Unit 1 Solar T-4700	Unit 2 Solar T-4500	Pipeline & Fuel System	On-site Roads	TOTAL (t/yr)
PM ₁₀	0.98	0.90		0.03	1.90
SO ₂	0.86	0.86			1.73
CO	12.14	11.13			23.27
NO _x	98.55	98.55			197.10
VOC	0.31	0.28	0.19		0.78
Benzene	0.002	0.002			0.00
Ethylbenzene	0.005	0.004			0.01
Formaldehyde	0.105	0.096			0.20
Toluene	0.019	0.018			0.04
Xylenes	0.009	0.009			0.02
Acetaldehyde	0.006	0.005			0.01

0.28

Operating Parameters for Unit 1

	Fuel Flow (MMBtu/hour)	Lower Heating Value (Btu/lb)	Heat Content (Btu/ft ³)	Fuel Usage Rate (ft ³ /hour)	Fuel Flow Rate (lbs/hour)	Hours per year
Maximum	33.8	20,612	939	35,996	1,640	8760

Unit 1 PTE

Pollutant	Emission factor	Units	Estimated Emissions (lbs/hour)	Emissions (t/yr)	Emission Factor Source
PM ₁₀	6.60E-03	lb/MMBtu	0.223	0.98	AP-42 Table 3.1-2a; April 2000.
SO ₂	1.97E-01	lb/hr	0.197	0.86	Based on grain loading.
CO	8.20E-02	lb/MMBtu	2.77	12.14	AP-42 Table 3.1-1; April 2000.
NO _x	22.5	lb/hr	22.50	98.55	Manufacturer's Data.
VOC	2.10E-03	lb/MMBtu	0.071	0.31	AP-42 Table 3.1-2a; April 2000.
Benzene	1.20E-05	lb/MMBtu	4.06E-04	0.002	AP-42 Table 3.1-3; April 2000.
Ethylbenzene	3.20E-05	lb/MMBtu	1.08E-03	0.005	AP-42 Table 3.1-3; April 2000.
Formaldehyde	7.10E-04	lb/MMBtu	2.40E-02	0.105	AP-42 Table 3.1-3; April 2000.
Toluene	1.30E-04	lb/MMBtu	4.39E-03	0.019	AP-42 Table 3.1-3; April 2000.
Xylenes	6.40E-05	lb/MMBtu	2.16E-03	0.009	AP-42 Table 3.1-3; April 2000.
Acetaldehyde	4.00E-05	lb/MMBtu	1.35E-03	0.006	AP-42 Table 3.1-3; April 2000.

Operating Parameters for Unit 2

	Fuel Flow (MMBtu/hour)	Lower Heating Value (Btu/lb)	Heat Content (Btu/ft ³)	Fuel Usage Rate (ft ³ /hour)	Fuel Flow Rate (lbs/hour)	Hours per year
Maximum	30.98	20,612	939			8760

Unit 2 PTE

Pollutant	Emission factor	Units	Emissions (lbs/hour)	Emissions (t/yr)	Emission Factor Source
PM ₁₀	6.60E-03	lb/MMBtu	0.204	0.90	AP-42 Table 3.1-2a; April 2000.
SO ₂	1.97E-01	lb/hr	0.197	0.86	Based on grain loading.
CO	8.20E-02	lb/hr	2.54	11.13	AP-42 Table 3.1-1; April 2000.
NO _x	22.5	lb/hr	22.50	98.55	Manufacturer's Data.
VOC	2.10E-03	lb/MMBtu	0.065	0.28	AP-42 Table 3.1-2a; April 2000.
Benzene	1.20E-05	lb/MMBtu	3.72E-04	0.002	AP-42 Table 3.1-3; April 2000.
Ethylbenzene	3.20E-05	lb/MMBtu	9.91E-04	0.004	AP-42 Table 3.1-3; April 2000.
Formaldehyde	7.10E-04	lb/MMBtu	2.20E-02	0.096	AP-42 Table 3.1-3; April 2000.
Toluene	1.30E-04	lb/MMBtu	4.03E-03	0.018	AP-42 Table 3.1-3; April 2000.
Xylenes	6.40E-05	lb/MMBtu	1.98E-03	0.009	AP-42 Table 3.1-3; April 2000.
Acetaldehyde	4.00E-05	lb/MMBtu	1.24E-03	0.005	AP-42 Table 3.1-3; April 2000.

PEGRAM STATION ESTIMATED EMISSIONS

Facility Total Estimated Emissions

Pollutant	Unit 1 Solar T-4700	Unit 2 Solar T-4800	Pipeline & Fuel System	On-site Roads	TOTAL (T/yr)
PM ₁₀	0.98	0.90		0.03	1.90
SO ₂	0.86	0.86			1.73
CO	5.37	4.71			10.08
NO _x	60.49	53.44			113.92
VOC	0.31	0.28	0.19		0.78
Benzene	0.002	0.002			0.00
Ethylbenzene	0.005	0.004			0.01
Formaldehyde	0.105	0.094			0.20
Toluene	0.019	0.018			0.04
Xylenes	0.009	0.009			0.02
Acetaldehyde	0.006	0.005			0.01

Operating Parameters for Unit 1

	Fuel Flow (MMBtu/hour)	Lower Heating Value (Btu/lb)	Heat Content (Btu/ft ³)	Fuel Usage Rate (ft ³ /hour)	Fuel Flow Rate (lbs/hour)	Hours per year
Maximum	33.8	20,612	939	35,998	1,640	8760

Unit 1 Estimated Emissions

Pollutant	Emission factor	Units	Estimated Emissions (lbs/hour)	Emissions (T/yr)	Emission Factor Source
PM ₁₀	6.80E-03	lb/MMBtu	0.223	0.98	AP-42 Table 3.1-2a; April 2000.
SO ₂	1.97E-01	lb/hr	0.197	0.86	Based on grain loading.
CO	1.23	lb/hr	1.23	5.37	Source test average
NO _x	13.81	lb/hr	13.81	60.49	Source test average
VOC	2.10E-03	lb/MMBtu	0.071	0.31	AP-42 Table 3.1-2a; April 2000.
Benzene	1.20E-05	lb/MMBtu	4.06E-04	0.002	AP-42 Table 3.1-3; April 2000.
Ethylbenzene	3.20E-05	lb/MMBtu	1.06E-03	0.005	AP-42 Table 3.1-3; April 2000.
Formaldehyde	7.10E-04	lb/MMBtu	2.40E-02	0.105	AP-42 Table 3.1-3; April 2000.
Toluene	1.30E-04	lb/MMBtu	4.39E-03	0.019	AP-42 Table 3.1-3; April 2000.
Xylenes	6.40E-05	lb/MMBtu	2.16E-03	0.009	AP-42 Table 3.1-3; April 2000.
Acetaldehyde	4.00E-05	lb/MMBtu	1.35E-03	0.006	AP-42 Table 3.1-3; April 2000.

Operating Parameters for Unit 2

	Fuel Flow (MMBtu/hour)	Lower Heating Value (Btu/lb)	Heat Content (Btu/ft ³)	Fuel Usage Rate (ft ³ /hour)	Fuel Flow Rate (lbs/hour)	Hours per year
Maximum	30.98	20,612	939			8760

Unit 2 Estimated Emissions

Pollutant	Emission factor	Units	Estimated Emissions (lbs/hour)	Emissions (T/yr)	Emission Factor Source
PM ₁₀	6.80E-03	lb/MMBtu	0.204	0.90	AP-42 Table 3.1-2a; April 2000.
SO ₂	1.97E-01	lb/hr	0.197	0.86	Based on grain loading.
CO	1.08	lb/hr	1.08	4.71	Source test average
NO _x	12.20	lb/hr	12.20	53.44	Source test average
VOC	2.10E-03	lb/MMBtu	0.065	0.28	AP-42 Table 3.1-2a; April 2000.
Benzene	1.20E-05	lb/MMBtu	3.72E-04	0.002	AP-42 Table 3.1-3; April 2000.
Ethylbenzene	3.20E-05	lb/MMBtu	9.91E-04	0.004	AP-42 Table 3.1-3; April 2000.
Formaldehyde	7.10E-04	lb/MMBtu	2.20E-02	0.096	AP-42 Table 3.1-3; April 2000.
Toluene	1.30E-04	lb/MMBtu	4.03E-03	0.018	AP-42 Table 3.1-3; April 2000.
Xylenes	6.40E-05	lb/MMBtu	1.98E-03	0.009	AP-42 Table 3.1-3; April 2000.
Acetaldehyde	4.00E-05	lb/MMBtu	1.24E-03	0.005	AP-42 Table 3.1-3; April 2000.

APPENDIX C

**Pegram Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

T1-030315

**FERC Natural Gas Tariff
for
40 CFR 60 Subpart GG
New Source Performance Standards for Stationary Gas Turbines
Fuel Sulfur Requirements**

TF03204 0030005P126Third Revised Sheet No. 204
TF04 Second Revised Sheet No. 204
TF05Larry E. Larsen, Vice President
TF06073097070197CP96-60-001 090197
TF078061008

GENERAL TERMS AND CONDITIONS
(Continued)

3. QUALITY

3.1 Gas Quality at Receipt Points. All Gas delivered by Shipper to Transporter shall conform to the applicable specifications in either Section 3.1(a) or Section 3.1(b). As used in this section, the La Plata Facilities are defined as those facilities commencing at a measurement facility downstream of the discharge side of Northwest's La Plata B compressor station southward to the Blanco Hub, including the La Plata A compressor station and certain plant interconnects, all located in southern Colorado and northern New Mexico.

(a) All Gas delivered by Shipper to Transporter at Receipt Points not connected to the La Plata Facilities shall conform to the following specifications:

(1) Hydrocarbon Liquids and Liquefiabiles: The hydrocarbon dew point of the gas delivered shall not exceed fifteen degrees Fahrenheit at any pressure between 100 psia and 1,000 psia as calculated from the gas composition and shall be free from hydrocarbons in the liquid state. At all times, any and all liquid or liquefiable hydrocarbons, or any other constituent or by-product, recovered from the gas by Transporter, after delivery of gas to Transporter shall be and remain the exclusive property of Transporter, except as specified in Section 20 of the General Terms and Conditions.

(2) Hydrogen Sulfide and Total Sulfur: The gas shall contain not more than one quarter grain of hydrogen sulfide per one hundred cubic feet and not more than twenty grains total sulfur per one hundred cubic feet.

(3) Carbon Dioxide and Total Nonhydrocarbons: The gas shall contain not more than two percent by volume of carbon dioxide and shall contain not more than three percent by volume of combined nonhydrocarbon gases including, but not limited to, carbon dioxide, nitrogen and oxygen, except as otherwise provided in Section 3.5.

(4) Dust, Gums, etc.: The gas shall be commercially free of dust, gums, dirt, impurities and other solid matter.

(5) Heating Value: The total gross heating value of the gas deliverable hereunder shall not be less than 985 Btu.

TP03204-B 0000005P126Original Sheet No. 204-B
TP04
TP05Larry E. Larsen, Vice President
TP06073097070197CP96-60-001 090197
TP078061008

GENERAL TERMS AND CONDITIONS
(Continued)

3. QUALITY (Continued)

(4) Dust, Gums, etc.: The gas shall be commercially free from objectionable odors, solid matter, dust, gums, and gum forming constituents, or any other substance which interferes with the intended purpose of merchantability of the gas, or causes interference with the proper and safe operation of the lines, meters, regulators, or other appliances through which it may flow.

(5) Heating Value: The total gross heating value of the gas deliverable hereunder shall not be less than 985 Btu.

(6) Oxygen: The gas shall not contain in excess of two-tenths of one percent by volume of oxygen, and the parties agree to exercise every reasonable effort to keep the gas completely free of oxygen.

(7) Temperature: The temperature of the gas at the point of delivery shall not exceed one hundred twenty degrees Fahrenheit.

(8) Water: The gas delivered shall be free from liquid water and shall not contain more than seven pounds of water in vapor phase per million cubic feet.

(9) Mercury: The gas shall be free from any detectable mercury.

(10) Toxic or Hazardous Substance: The gas shall not contain any toxic or hazardous substance in concentrations which, in the normal use of the gas, may be hazardous to health, injurious to pipeline facilities, or be a limit to merchantability or be contrary to applicable government standards.

TF03205 0010005P126Substitute First Revised Sheet No. 205
 TP04 Original Sheet No. 205
 TF05Laren M. Gertsch, Director
 TF06031496030496RP95-442-000 040196
 TF077461256

GENERAL TERMS AND CONDITIONS
 (Continued)

3. QUALITY (Continued)

3.2 Gas Quality at Delivery Point(s). The gas delivered by Transporter to Shipper at the Delivery Point shall be natural gas containing a gross heating value of at least 985 Btus. Such gas shall be commercially free of dust, gums, dirt, impurities and other solid matter and shall not contain more than one-quarter grain hydrogen sulfide per one hundred cubic feet as determined by using commercially available on-line analyzers and/or such analytical methods that are generally accepted in industry practice; provided that Transporter may install and utilize a recording hydrogen sulfide analyzer to monitor the gas at points at which it deems such continuous monitoring to be desirable. The gas to be delivered shall not contain more than twenty grains of total sulfur per one hundred cubic feet.

The gas shall be free of water and hydrocarbons in liquid form at the temperature and pressure at which the gas is delivered and in no event shall have a water content in excess of seven pounds in vapor phase per million cubic feet.

3.3 Determination of Gross Heating Value and Component Analysis. The party operating the measurement equipment shall determine the gross heating value of the gas delivered and its component analysis at reasonable intervals. Such determination shall be made using either an on-line chromatograph or by chromatographic analysis of a representative sample of gas taken with a continuous sampler. Transporter may at its option allow the use of spot samples. If at any time and for any reason Shipper or Transporter should question the results of any spot sampling, a redetermination shall be made and the redetermination mutually acceptable to the parties shall be used; provided, however, if neither party questions such results within a period of sixty (60) days following the determination thereof, then such results shall be deemed conclusive and binding upon the parties. Stu measuring equipment shall be installed at a location or locations where the gross heating value of the gas received or delivered hereunder may be reasonably determined.

3.4 Failure to Meet Specifications. Transporter or Shipper shall have the right, exercisable by the giving of written or oral notice to the other party, to require the remedy of any failure to deliver or redeliver gas in accordance with the quality specifications set forth in Sections 3.1 and 3.2. In the event gas delivered by either party fails to conform to such specifications, as evidenced by the latest chromatograph analysis derived from an on-line chromatograph or from a sample taken manually and analyzed by a chromatograph, the receiving party may refuse to accept all or any portion of such gas.

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3. QUALITY (Continued)

3.5 Accepting Gas Which Fails to Meet Specifications. To the extent Transporter can accept gas that does not meet quality specifications without jeopardizing Transporter's ability to meet its obligations to deliver gas to downstream interconnecting pipelines or markets, it will do so on a non-discriminatory basis to all similarly situated Shippers. When such ability is jeopardized by gas not meeting the quality specifications as set forth in Section 3.1, Transporter will implement the following steps in the following order:

- (a) Transporter will identify the receipt point(s) from which gas is flowing that contain more than 2% by volume of carbon dioxide and/or more than 3% by volume of total nonhydrocarbon gases and which are contributing to the gas quality problem.
- (b) Transporter will then rank these receipt points according to the highest percentage by volume of carbon dioxide and/or nonhydrocarbon gas entering the system (depending on which violation of quality specifications is impacting or may impact Transporter's ability to deliver). Transporter will make reasonable efforts to notify receipt point operators by telephone and via Transporter's Designated Site at the earliest time possible as to the action required and the time within which compliance is required, depending on the operational situation existing at the time. Transporter will notify the receipt point operators in the order of the ranking starting with the receipt point with the highest percentage of applicable contaminant until the problem is resolved. The required action may include any alternative that will alleviate the gas quality problem.
- (c) Within two business days after resolving a gas quality problem, Transporter will post to its Designated Site: a description of the problem, the receipt point, the receipt point operator, the action required, the action taken, and the date and time that the problem was resolved.